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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/723,195	11/26/2003	John F. Wirkus	GSIE 8803US	9038

1688 7590 09/08/2004

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EXAMINER

NGUYEN, TU MINH

ART UNIT PAPER NUMBER

3748

DATE MAILED: 09/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/723,195

Applicant(s)

WIRKUS ET AL.

Examiner

Tu M. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 030104.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Objections

1. Claims 17-20 are objected to because on line 1 of each claim, "afterburner" should read --exhaust gas recirculation valve--. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office Action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 6, 8-11, and 17-20 are rejected 35 U.S.C. 102(e) as being anticipated by Geiger et al. (U.S. Patent 6,530,366).

Re claims 1 and 11, as shown in Figure 4b, Geiger et al. disclose an afterburner and an exhaust gas recirculation valve system for a motor vehicle, the valve system comprising:

- an exhaust gas recirculation valve (20);
- an intake pipe (not numbered but clearly shown in Figure 4b) coupled to an intake orifice of the exhaust gas recirculation valve; and

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- a screen (12) affixed to the intake pipe that captures and burns particles contained in an exhaust gas which are a size large enough to obstruct the exhaust gas recirculation valve (lines 14-20 of column 2).

Re claims 9, 10, 19, and 20, in the valve system and the afterburner of Geiger et al., the screen is made from a stainless steel with a high thermal conductivity (lines 1-7 of column 3).

Re claims 6 and 17, in the valve system and the afterburner of Geiger et al., the screen (14) is affixed to an intake pipe by interference fit (see Figures 4a-4b).

Re claims 8 and 18, in the system and afterburner of Geiger et al., the screen (14) is affixed to an intake pipe by mechanical means.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office Action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2-5 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Geiger et al. as applied to claims 1 and 11, respectively, above, in view of legal precedent.

Re claims 2 and 16, the valve system and afterburner of Geiger et al. disclose the invention as cited above, however, fail to disclose that the screen is thimble-shaped.

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It would have been an obvious matter of design choice to have the screen of Geiger et al. in thimble-shaped, since it has been held that a change in the shape of the element involves only routine skill in the art. *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

Re claims 3-5, the afterburner of Geiger et al. discloses the invention as cited above, however, fails to disclose that the screen has a mesh size of about 12 to 20, wherein the screen has a minimum size of 5 mesh, and a maximum size of 40 mesh.

Geiger et al. disclose the claimed invention except for specifying an optimum range of mesh size for the screen. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a specific optimum range of mesh size for the screen, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

6. Claims 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Geiger et al. as applied to claim 11 above, in view of official notice.

The valve system of Geiger et al. discloses the invention as cited above, however, fails to disclose that the exhaust gas recirculation valve is at least one of an integral backpressure type valve, a ported type valve, an electronic type valve, and a transducer type valve.

It is well known to those with ordinary skill in the art that the EGR valve utilized by Geiger et al. is at least one of an integral backpressure type valve, a ported type valve, an electronic type valve, and a transducer type valve. Therefore, such disclosure by Geiger et al. is notoriously well known in the art so as to be proper for official notice.

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7. Claims 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Geiger et al. in view of official notice.

Re claim 21, as illustrated in Figure 4b, Geiger et al. disclose a method of afterburning large particles in an exhaust gas stream of an internal combustion engine, the method comprising the steps of:

- heating a perforate afterburner (12) located within the exhaust gas stream to a temperature high enough to burn large particles (lines 14-20 of column 2);
- capturing large particles contained in exhaust gas stream with the afterburner;
- holding the captured particles with the afterburner for a sufficient time to burn the large particles to a size they can pass through the afterburner.

Geiger et al., however, fail to disclose that the exhaust stream comprises at least one molar percent oxygen.

It is well known to those with ordinary skill in the art that during a soot burn-off of the screen, the exhaust stream must be lean of stoichiometric or contain excess air; or in other word, the exhaust stream must have at least one molar percent of oxygen. Therefore, such disclosure by Geiger et al. is notoriously well known in the art so as to be proper for official notice.

Re claim 22, in the method of Geiger et al., the afterburner is heated to a temperature of at least 900°F which is a generally accepted value for spontaneous combustion of soot.

Prior Art

8. The IDS (PTO-1449) filed on March 1, 2004 has been considered. An initialized copy is attached hereto.

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9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure and consists of five patents and two patent applications: Bircann et al. (U.S. Patent 6,481,424), Lucas et al. (U.S. Patent 6,598,388), Beck et al. (U.S. Patent 6,742,335), Otaka et al. (Japan Publication 62-83014), Tsuchiya et al. (Japan Publication 07-259654), Beck et al. (U.S. Patent Application 2004/0006878), and Ishikawa (U.S. Patent Application 2004/0093866), each further discloses a state of the art.

Communication

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Tu Nguyen whose telephone number is (703) 308-2833.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Thomas E. Denion, can be reached on (703) 308-2623. The fax phone number for this group is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-1148.

Tu M. Nguyen

TMN

Tu M. Nguyen

September 3, 2004

Patent Examiner

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